A NEW BOTANICAL JOURNAL.

MR. A. A. HELLER, the well-known botanical collector of Lancaster, Pa., has issued the first number of a new botanical journal bearing the euphonious name of *Muhlenbergia*. This first number is an eight-page octavo, well printed, on good paper. The prefatory editorial statement indicates that it is to be somewhat like Professor E. L. Greene's *Pittonia*, appearing, like that journal, at irregular intervals, and serving largely as the personal organ of its editor. The present number is devoted entirely to 'Some Changes in Nomenclature,' in continuation of the first pages of the 'Catalogue of North American Plants,' recently issued by the same author. Other numbers are promised to appear 'at early dates,' and they are to contain 'articles of general interest, both technical and non-technical, treating not only of flowering plants and ferns, but of the lower cryptogams as well.'

ENGLER'S 'PFLANZENREICH.'

THE indefatigable Berlin botanist who has brought one great work—'Die Natürlichen Pflanzenfamilien'—almost to completion, now undertakes a still greater work under the title 'Das Pflanzenreich.' The former treated of the families of plants, and the arrangement and brief characterization of their genera; the latter is to give full descriptions of genera, and diagnoses of all their species. The 'Pflanzenfamilien' was in fact a Genera Plantarum, supplementing, and to some extent supplanting, Bentham and Hooker's 'Genera Plantarum'; the 'Pflanzenreich,' on the other hand, is to be a universal 'Species Plantarum.' It is by all odds the greatest work in systematic botany ever undertaken.

It will be issued in the form of monographs, each family receiving separate treatment. For the present the work will be confined to the *Embryophyta siphonogama* (*Spermatophyta*), but it is the intention of the editor to take up later the *Embryophyta asiphonogama*, and ultimately the *Euthallophyta* and *Myxothallophyta*. The families are numbered, and the monographs will appear as fast as they are completed. The first one to appear is Family 45—Musaceae—from the pen of Dr. Karl Schumann. Its treatment is such as to assure us of the most satisfactory results. In particular are the excellent illustrations to be commended.

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PRACTICAL RESULTS OBTAINED FROM THE STUDY OF EARTHQUAKES.

FROM observations on the destructive effects of earthquakes, the knowledge obtained respecting the actual nature of earthquake motion, and from experiments made upon brick and other structures, new rules and formulæ for the use of engineers and builders have been established. In Japan and other countries, these have been extensively applied in the construction of piers for bridges, tall chimneys, walls, ordinary dwellings, embankments, reservoirs, etc. Inasmuch as the new types of structures have withstood violent earth shakings, whilst ordinary types in the neighborhood have failed, it may be inferred that much has already been accomplished to minimize the loss of life and property.

The application of seismometry to the working of railways, particularly in Japan, has led to the localization of faults on lines, and alterations in the balancing of locomotives. The result of the latter has been to decrease the consumption of fuel.

Records of the unfelt movements of earthquakes indicate the time, the position, and what is of more importance, also the cause of certain cable interruptions. The practical importance of this latter information, especially to communities who may by cable failures, be suddenly isolated from the rest of the world, is evident. The many occasions that earthquake records have furnished definite information respecting disasters which have taken place in distant countries, correcting and extending telegraphic reports relating to the same, is another indication of the practical utility of seismic observations. Seismograms have frequently appraised us of sea waves and violent earthquakes in districts from which it is impossible to receive telegrams, whilst the absence of such records has frequently indicated that information in newspapers has been without foundation, or at least exaggerated. The

localization of the origins of these world shaking earthquakes, beside indicating the sub-oceanic sites of geological activity, positions where the hydrographer may expect to find unusual depths. They have also shown routes to be avoided by those who lay cables.

Seismograms of unfelt movements throw light upon what have up to recently been regarded as unaccountable deflections in the photograms from magnetographs, barographs, and other instruments sensible to slight displacements. They have also explained unusual rates in certain time-keepers. The most important scientific result obtained is dependent upon observations on the rate at which motion is propagated in various directions through the world. Until these observations had been made, our knowledge respecting the interior of the earth, chiefly related to its density and temperature, now we know much respecting its rigidity.

JOHN MILNE.

SCIENTIFIC NOTES AND NEWS.

OTTO H. TITTMAN, assistant superintendent of the U. S. Coast and Geodetic Survey, has been promoted to the superintendency, vacant by the resignation of Dr. Henry S. Pritchett, to accept the presidency of the Massachusetts Institute of Technology. Mr. Tittman has been connected with the Survey since 1867.

PROFESSOR JOHN C. SMOCK, for the last ten years geologist of the State of New Jersey, has tendered his resignation.

MR. OUTRAM BANGS has been appointed assistant in mammology in the Museum of Comparative Zoology at Cambridge, Mass.

SIR JOSEPH HOOKER, the eminent English botanist, has been elected a foreign associate of the Paris Academy of Sciences.

LORD LISTER has resigned his position on the Senate of the University of London as representative of King's College, and Dr. Thomas Buzzard has been appointed in his place.

MR. EVELYN B. BALDWIN has sailed for Europe to examine methods of polar exploration, and to secure equipment for the proposed expedition under the auspicies of Mr. Ziegler.

PROFESSOR CARL GEGENBAUR has received the Swammerdam medal of the Amsterdam Society of Medical and Natural Science.

MR. LEROY ANDERSON, who was this year called from Cornell University to the University of California as instructor on dairy husbandry, has been offered the position of chief agriculturist in the Philippines. Mr. Lawrence M. Jacobs, of the Treasury Department, has been appointed statistician of the Taft Philippine Commission.

DR. A. DONALDSON SMITH, after lecturing before the Royal Geographical Society, has returned from England to his home in Philadelphia.

DR. ROBERT T. HILL, of the U. S. Geological Survey, non-resident lecturer to the University of Michigan, is now delivering a series of lectures at that University on 'The Industrial Significance of the West Indies to the United States.'

AN executive committee has undertaken to erect a bust of the late Professor J. B. Carnoy in the cytological laboratory established by him in the University of Louvain. An honorary international committee has been formed, including in America Messrs. Agassiz, Eigenmann, Macallum, McMurrich and Minot.

IT is proposed to found two memorials in honor of the late Miss Mary Kingsley, one a small hospital at Liverpool for the treatment of tropical diseases and one a Society for the study of the natives of West Africa. It is planned "that the 'Mary Kingsley Society' should employ a trained ethnologist, both to collect and arrange in scientific form the material which is thus already on record, and to institute and direct research for further material of the same sort; and it is intended that the Society, after the manner of the Royal Asiatic Society, should periodically publish the results which it obtains and should thus provide additional knowledge by which European relations with West Africa may be most safely and effectively directed, with profit both to the natives and to the Empire."

DR. BURKE AARON HINSDALE, professor of the science and art of teaching at the University of Michigan since 1888 and the author of various